Mundet Cork Products

a	Cold Storage Insulation
b	Cold Pipe Covering and Lagging
c	Roof Insulation
d	Vibration Isolation

The Essentials of a Good Insulator

1. Low Conductivity
2. Light Weight
3. Structural Stability
4. Non-Absorbence
5. Fire Retardance
6. Ease of Installation

Why Cork is a Good Insulator

1. Cork restricts the transmission of heat, sound and vibration to a remarkably low degree, due to its internal cellular structure of sealed and non-connecting minute dead-air spaces.
2. Cork is light in weight, despite its structural strength. It is easily handled and it adds less weight than other rigid insulations — approximately 8 pounds per cubic foot.
3. Cork has a cellular structure sufficiently strong and elastic to maintain its shape and characteristics under varying conditions of use. Its elastic properties are unique.
4. Cork has no capillary attraction and so does not absorb dampness or odors. Bacterial growth, swelling, and loss of insulating value due to moisture infiltration are thus avoided.
5. Cork supports combustion only with difficulty and Mundet corkboard insulation meets the requirements of the U. S. Bureau of Standards tests as a fire retardant.
6. Corkboard units are strong, light and easily installed. No special handling required. Cuts easily, readily holds nails or wood skewers; bonds with cement, asphalt, or paint.

MUNDET

Sales and Service In 1865 the name of Mundet was first identified with cork products. Today the Company ranks among the leaders of the industry. The Company maintains branches in the principal cities of the United States and Canada for the convenience of its clients. Our branch offices (see back cover) are in charge of competent engineers who will gladly co-operate and furnish information pertinent to insulation work. Mundet Cork & Insulation, Ltd., performs the same function and offers the same facilities in Canada.

MUNDET

Contracting The Company maintains a well organized erecting force at each branch office fully capable of handling any installation contract involving its products. No contract is too small or too large.

MUNDET

Plant Facilities The Company has two plants for the exclusive manufacture of cork insulation products—one in Portugal and the other in New Jersey, ten miles from New York City. Each plant can produce many million feet (board measure) of insulation a year. The Portuguese plant is adjacent to the Port of Lisbon from which ocean sailings are possible to any part of the world. The New Jersey plant at all times carries large stocks of finished products, as do all of the branch offices located in the principal cities of the United States.

MUNDET

Guarantee The Company unqualifiedly guarantees that its material and workmanship are of the best and agrees to make good, without cost to the client, any defect that may be chargeable to inferior material or workmanship as indicated in its contract form.

Mundet Cork

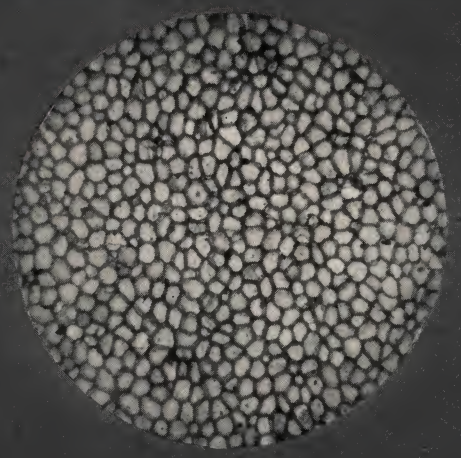
Natural Cork—Cork in its natural state consists of minute hermetically sealed cells containing "dead" air. Approximately 200,000,000 cells per cubic inch. Cell walls are resinous, resilient, and impervious to the passage of air. There is no "free" air to conduct heat or moisture through the mass and no capillary attraction.

Mundet Corkboard—Natural cork is ground into ¼" to ⅝" granules and compressed under heat in moulds to produce Mundet flat or shaped corkboard. Air spaces between granules are eliminated by the pressure and the milled resin in the cell walls cements the mass into a homogeneous structure retaining the properties of natural cork. Flat sheets, slabs and mats, and moulded fitting covers are furnished in various sizes and finishes. Regranulated cork is also available.

Mundet corkboard meets U. S. Government Master Specifications. Its heat transmission is guaranteed not to exceed .29 Btu when tested in accordance with Bureau of Standards regulations. In actual cold storage practice, this figure may be safely reduced to .27 Btu.

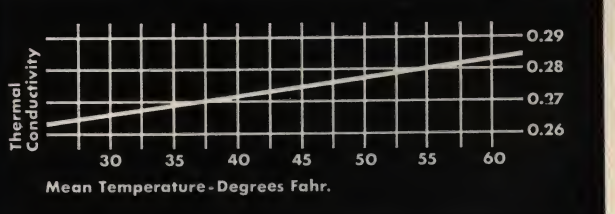
Material	Thermal Conductivity Average of two laboratories	
	Conductivity (K) (At 60° F)	Relative Insulating Value
Corkboard*	0.273	100.0
Shredded Redwood Bark	0.286	95.7
Animal Hair Board	0.302	91.0
Wood Fiber Board	0.312	87.6
Mineral Wool Board	0.321	85.3
Vegetable Fiber Board	0.346	79.2

* Corkboard values are averages of five different makes



The photomicrograph of cork shows how the cells completely fill the cork structure. Note that although each cell area and all areas are shown 5625 times actual size, no voids are evidenced between cells.

Conductivity Chart For Corkboard Insulation



a Cold Storage Insulation

General Specifications

Note:—Add following Joint and Finish specifications to installation specifications given below.

Joints—All joints broken, both as to adjacent layers and to preceding course.

Finishes—*Plaster*—½ in. mixed 1:2. First coat, rough; second, float or trowel finished and marked off in 4 ft. squares to minimize and direct shrinkage cracks.—*Mastic*—⅛ in. First coat, brush or spray application of Mundet Asphalt Emulsion; second coat, trowel application mixed in proportions of 50 gal. of same emulsion, 100 lb. asbestos floats, 4 cu. ft. clean screened sand. Is black, may be painted.

Table of Recommended Thicknesses in inches

Range of temperature	Walls	Ceilings	Floor on ground	Floor above ground	Roofs
Below 0° F.	8	8	7	8	9
0° to 10° F.	7	7	6	7	8
10° to 20° F.	6	6	5	6	7
20° to 35° F.	5	5	4	5	6
35° to 50° F.	4	4	3	4	5
50° to 60° F.	3	3	2	3	4
Above 60° F.	2	2	0	2	2

Walls

Concrete, Brick, Hollow Tile

1 First Insulation Course Laid in Cement Mortar—***Preliminary***—Concrete walls roughened by hacking for bond.—***Insulation***— . . . in. Mundet Corkboard. First course in ½ in. bed of Portland cement mortar. Second course against first in heavy dip coat of hot asphalt and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

2 First Insulation Course Laid in Hot Asphalt—***Preliminary***—Concrete walls roughened by hacking for bond. Single coat Portland cement plaster left under float and thoroughly set.—***Insulation***— . . . in. Mundet Corkboard. Two spray or brush coats Mundet Asphalt Primer then first course Mundet Corkboard. Second course as in No. 1.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

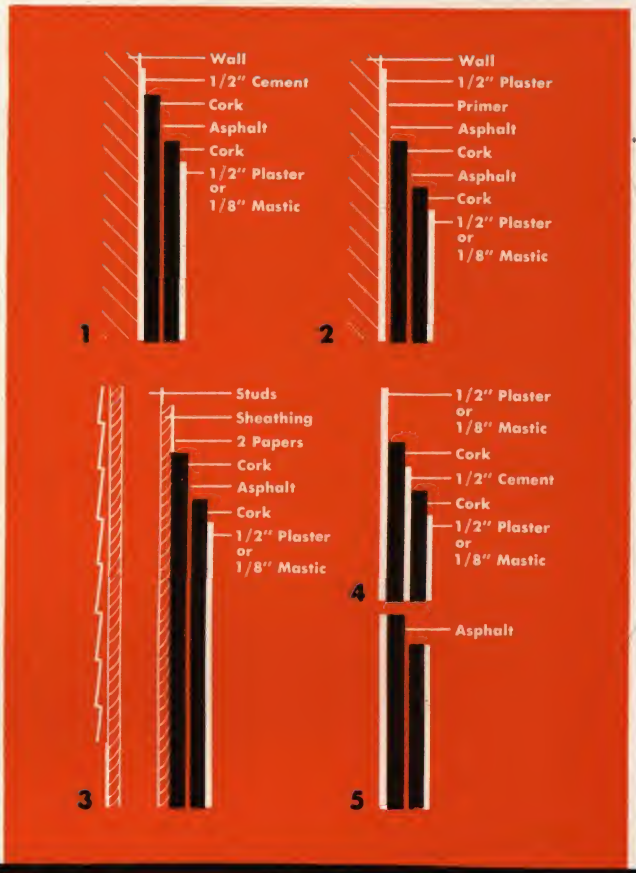
Wood Frame

3 First Insulation Course Nailed to Wall—***Preliminary***—Two courses waterproof insulation paper tacked against sheathed surfaces.—***Insulation***—. . . in. Mundet Corkboard. First course nailed dry to wall with galvanized wire nails especially made for such work. Second course as in No. 1.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

Cork Partitions—Solid cork, self-sustaining type

4 Cement Mortar Bond—***Preliminary***—Temporary studding for bracing.—***Insulation***—. . . in. Mundet Corkboard. First course erected against temporary studding. Second course against first in ½ in. Portland cement mortar and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.

5 Hot Asphalt Bond—***Preliminary***—Like No. 4—***Insulation***—Like No. 4 except second course erected in dip coat of hot asphalt additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster, as under Gen. Spec.

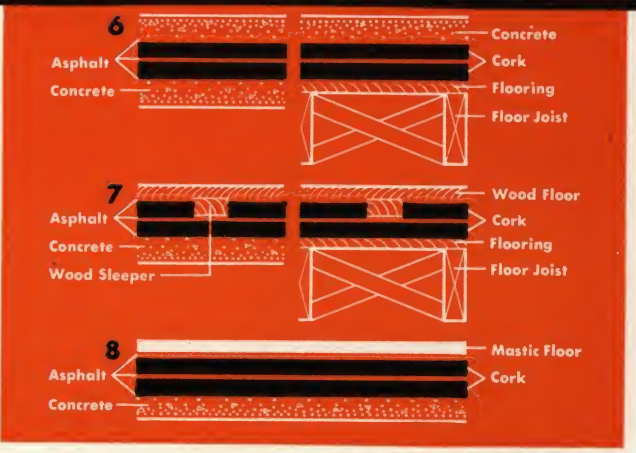


Floors

6 Concrete. Concrete or Wood Base.—***Insulation***—. . . in. Mundet Corkboard. First course in heavy hot asphalt mop coat. Second course similarly laid on first.—***Joints***—as under General Specifications.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints.—***Concrete Wearing Floor***—(To be specified.)

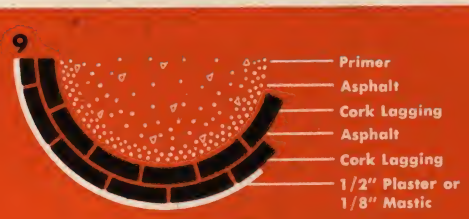
7 Wood. Concrete or Wood Base—***Insulation***—. . . in. Mundet Corkboard. Two courses, laid like No. 6, second course after sleepers are located on first course.—***Joints***—as under General Specifications.—***Sleepers***—Wood, 2 in. x 4 in. on 28 in. centers, mopped in.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints.—***Wood Wearing Floor***—(To be specified.)

8 Mastic. Concrete Base—***Insulation***—. . . in. Mundet Corkboard. Two courses laid like No. 6.—***Joints***—as under General Specifications.—***Insulation Finish***—Heavy hot asphalt mop coat to seal all joints.—***Mastic Floor***—2 in. mastic wearing surface in two courses.



Columns

9 ***Preliminary***—Two coats Mundet Primer on columns.—***Insulation***—. . . in. Mundet Cork Lagging. First course in hot asphalt dip coat; second course similarly laid on first. Hardwood skewers of suitable length used to lock adjacent lags to each other, also to additionally secure second course to first.—***Joints***—as under General Specifications.—***Finish***—Plaster or Mastic, as under General Specifications.



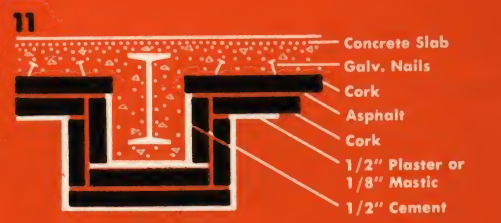
Ceilings

Concrete

10 First Insulation Course Laid in Cement Mortar—***Preliminary***—Ceiling areas roughened by hacking for bond and covered with tight scratch coat of Portland cement mortar.—***Insulation***—. . . in. Mundet Corkboard. First course in ½ in. bed Portland cement mortar and securely propped in place until concrete sets; second course applied against first in heavy dip coat of hot asphalt and additionally secured by hardwood skewers.—***Joints***—as under General Specifications.—***Finish***—Plaster or Mastic, as under General. (If plaster, No. 19-gauge 2-mesh galvanized wire mesh should be securely stapled to cork surfaces before plaster is applied.)

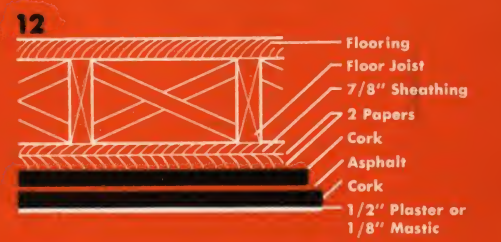
Alternate—First Insulation Course Laid between Sleepers—***Preliminary***—Ceiling areas stripped with treated 2 x 4's spaced 12 in., 18 in. or 24 in. and bolted to ceiling every 5 feet with galvanized expansion bolts; spray coat of Mundet Asphalt Primer.—***Insulation***—. . . in. Mundet Corkboard. First course in heavy dip coat hot asphalt and toe nailed to 2 x 4 strips. Second course as in No. 10.—***Joints***—as under General Specifications.—***Finish***—As in No. 10.

11 First Insulation Course Installed During Construction—***Preliminary***—Forms of slab portion of ceiling installed at height to accommodate insulation.—***Insulation***—. . . in. Mundet Corkboard. First insulation course of slab portion of ceiling placed in forms before pouring concrete, with at least 6 special galvanized nails per corkboard sheet driven obliquely into corkboard with heads protruding 1½ in. After stripping forms, second insulation course and both courses on beams and girders applied and finished as in No. 11.—***Joints***—as under General Specifications.—***Finish***—as in No. 10.



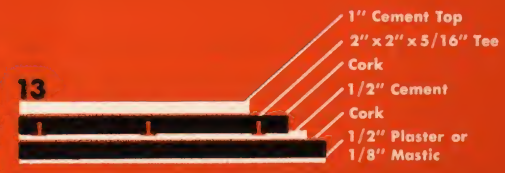
Wood

12 First Insulation Course Underside Wood Sheathing—***Preliminary***—Courses of ⅞ in. tongue and grooved sheathing nailed to underside of ceiling joists; two layers of waterproof insulation paper; second similar course of sheathing; two layers waterproof insulation paper tacked to sheathing.—***Insulation***—. . . in. Mundet Corkboard. First course nailed to prepared sheathing. Second course against first in dip coat of hot asphalt.—***Joints***—as under General Specifications.—***Finish***—Plaster or mastic, as under General Specifications.



False T Iron

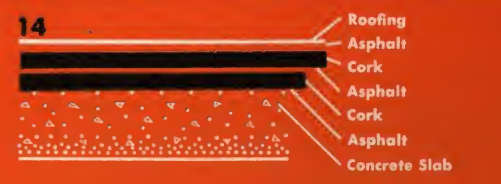
13 ***Preliminary***—Framework of 2 x 2 x . . . in. tee irons on 12½ in. centers erected on 2 x 2 in. wood framing concealed in cork wall insulation or suspended by pencil rods from main ceiling construction.—***Insulation***—. . . in. Mundet Corkboard. First course fitted snugly between tee irons after edges dipped in hot asphalt. Second course against underside of first in ½ in. Portland cement mortar; additionally secured by hardwood skewers. — ***Joints*** — as under Gen. Spec.—***Finish***—On top of first course, 1 in. Portland cement plaster. On bottom of second course as under Gen. Spec.



Roofs

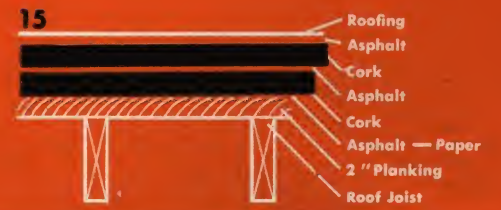
Concrete

14 ***Preliminary***—Clean roof and smooth any rough spots.—***Insulation***—. . . in. Mundet Corkboard. First course on concrete deck in heavy mop coat of hot asphalt. Second course similarly laid against first.—***Joints***—as under General Specifications.—***Finish***—None. Insulation protected before nightfall with at least two-ply roofing.



Wood

15 ***Preliminary***—Clean roof and smooth any uneven spots. On planking, one course waterproof insulation paper with seams lapped at least 3 in. and mopped in with hot asphalt.—***Insulation***—As in No. 14.—***Joints***—as under General Specifications.—***Finish***—as in No. 14.



b | Cold Pipe Covering and Lagging

Uses—For insulation of cold-water, brine, ammonia, and other refrigerant lines and cylindrical tanks, coolers, etc.

Manufacture — Same as Mundet Corkboard, thus offering the same high resistance to heat infiltration. Moulded to fit all standard size pipes and fittings and asphalt coated on inside and outside surfaces as protection against moisture. Mundet Cork Lagging for cylindrical vessels is beveled for accurate fitting of longitudinal joints and similarly treated to prevent moisture infiltration.

Clearances and Suggested Thicknesses—Pipe, Fittings and Lagging

Temp. Range °F.	Fittings	Min. Clearance Req. Between Pipes	Min. Clearance Req. Bet. Pipes and Wall Surfaces	Cork Thickness Type Inches	Mundet Cork Lag. Temp. °F.	Mundet Cork Lag. Inches
Above 35°	Screwed under 6"	6"	4"	Ice Water Thick 1.2-1.9*	Above 40°	2
	Screwed over 6"	10"	5"			
	Flanged, any size	10"	5"			
20 to 35°	Screwed under 6"	8"	6"	Brine Thick 1.7-3.0	25 to 40°	3
	Screwed over 6"	14"	8"		10 to 25°	4
	Flanged, any size	14"	8"			
−5 to 20°	Screwed under 6"	10"	8"	Special Thick 2.6-4.0	Below 10°	6
	Screwed over 6"	18"	12"			
	Flanged, any size	18"	12"			

* Thickness required varies according to size of pipe. Standard lengths, 3'.

Pipe Covering

General Specifications

Note—For complete specifications, add Finish specifications below.

Preliminary—Pipe lines and fittings tested and approved; freed of rust, scale, dirt, oil, frost, moisture, loose connections.—***Spacing***—Minimum clear space (between pipes . . . ; between pipes and adjacent surfaces . . . ;) as per table above.—***Pipe Insulation***—Mundet (1, 2 or 3 of table above) Cork Pipe Covering; secured with copper-clad steel wires spaced 6 in. intervals. Screwed fitting covers are installed ***before*** pipe covering. Flanged fitting covers are installed ***after*** pipe covering.—***Fittings Insulation***—Mundet Moulded Cork Fitting Covers of same thickness as Pipe Insulation; secured with copper-clad steel wires, using at least six on all flanged fittings also on screwed fittings over 6 in., four on screwed fittings up to 6 in.—***Voids***—All space between fittings and Fitting Covers filled with Mundet Fitting Filler.—***Joints***—Butted firmly and securely together; sealed with Mundet Waterproof Cement.—***Seams***—Seams and chipped edges in Pipe Covering and Fitting Covers filled with Mundet Seam Filler and surface made smooth.—***Hanger Shields***—Pipe line supported outside of Covering in carefully fitted metal shields, which extend half way up the Covering and 4 in. each side of hanger.

Lagging

General Specifications

Note—For complete specifications, add Finish specifications.

Preliminary—Equipment tested, approved and prepared as in Preliminary on Page 6.—***Body Insulation***—Mundet (4, 5, 6 or 7 listed above) Cork Lagging applied in . . . courses; secured with copper-clad steel wires spaced not more than every 6 in. On tanks over 20 in. diameter . . . outside measurement of cork . . . secured with No. 25 gauge galvanized spring steel bands ¾ in. wide, applied with special flush type clips on 9 in. centers. Additional courses applied similarly, with all joints broken.—***Flange Insulation***—Same as Body Insulation; lapped upon body lagging at least thickness of insulation (never less than 4 in.) and projecting beyond outermost portion of head a distance equal to body insulation thickness.—***Head Insulation***—Mundet Corkboard Discs of same total thickness as Body Insulation; applied against head and supported by flange lagging.—***Voids***—All space between body and lagging, also between bolts and flanges filled with Mundet Fitting Powder; space between heads and flanges filled with fine regranulated Mundet Cork.—***Joints***—Butted firmly and securely together; sealed with Mundet Waterproof Cement; all broken.—***Seams***—Seams and chipped edges filled with Mundet Seam Filler and surface made smooth.

(A) Standard Mineral Rubber Finish

Used for the majority of pipe covering installations.—See General Specifications above.—***Finish***—One coat of Mundet Finish Paint on an entire outer surface of insulation.

(B) Roofing Felt Weatherproof Finish

Used for outdoor or moist air conditions.—See General Specifications above.—***Roofing Felt***—. . . layers of . . . ply smooth-surfaced asphalted roofing felt applied after seams in Pipe Covering have been filled; joints lapped at least 2 in.; laps laid to form a watershed; secured with staples or copper-clad steel wire and sealed with asphalt paint.

(C) Canvas Jacket, painted

Used for a decorative finish.—See General Specifications above—***Preparation***—No. 8 rosin-sized paper wrapped smoothly over Pipe and Fittings Covering; asbestos cement troweled on fittings thick enough to give smooth base for canvas. — ***Jacket*** — 8 oz. canvas stretched smoothly over paper, neatly sewn with at least three stitches per inch; seams located where least visible.—***Finish***—Canvas sized; when dry, painted with two coats of lead and oil paint.

(D) Membrane Jacket

Used for severe low temperature conditions—See General Specifications above.—***Membrane***—Over fittings, a layer of mineral rubber cloth lapped at least 2 in., sealed with asphalt paint. Over straight pipe, a layer of rubberized adhesive membrane tape started with a 2 in. lap over fittings and lapped at least 1 in. on pipe.—***Finish***—As in A or C.

(E) Mastic Finish

Usually used with Pipe Covering "A".—See General Specifications above.—***Finish***—⅛ in. applied over entire outer surface of insulation. First coat, brush or spray application of Mundet Asphalt Emulsion; second coat, trowel application mixed in proportions of 50 gal. of same emulsion, 100 lb. asbestos floats, 4 cu. ft. clean screened sand. Is black, may be painted.

(F) Canvas Jacket, painted

Often used with Pipe Covering "C".—See General Specifications above.—***Preparation***—No. 8 rosin-sized paper placed smoothly over Body Insulation.—***Jacket***—8 oz. canvas stretched smoothly over paper; neatly sewn with at least three stitches per inch; seams of invisible type.—***Finish***—Canvas sized; when dry, painted with two coats lead and oil paint.

(G) Plaster Jacket

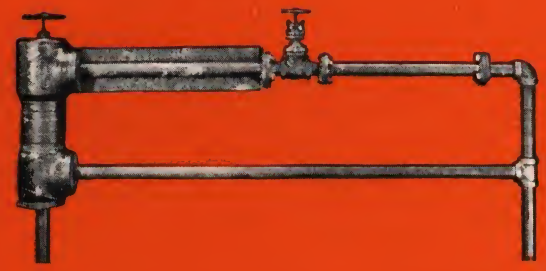
Used for neat appearance and possibility of rough usage.—See General Specifications above.—***Preparation***—1 in. hexagonal mesh galvanized wire, securely stapled to Body Insulation.—***Jacket***—Two coats Portland and asbestos cement plaster. First, rough or scratch coat; second, troweled smooth and even.—***Finish***—Painting optional.

Pipe Covering Installation

1

4

2



5

3

6

1—Showing screwed Tee cover in place and screwed angle valve cover being fitted. After the angle valve cover is wired in place, the voids between cover and valve are filled with a mixture of granulated cork and melted paraffin or Mundet Brine Putty.

2 — Showing installations of pipe covering between screwed angle valve cover and bolt heads of flange.

3—Applying flanged valve cover after pipe covering has been installed between flange bolt heads. Voids between valve and cover are filled as in "1".

4—Showing application of screwed elbow cover and the completed flanged valve cover. A cork disc is inserted at the bonnet of the valve cover to seal in the void filler compound.

5—Nipple between elbow and flange has been insulated and flange cover is being prepared.

6—Pipe covering is complete. All cork contact surfaces covered with Mundet Waterproof Cement before wiring. All pipe covering wires spaced at 6" or less intervals. Seams filled with Mundet Seam Filler and entire installation painted with Mundet Finish Paint.

C Roof Insulation

Mundet "Jointite" Corkboard

The high resistivity to heat infiltration plus the other basic characteristics of Mundet "Jointite" Corkboard make this an ideal material for roof insulation.

Its lightness is of even greater value and allows various savings in material and installation of — **a** — walls, columns, girders, trusses and purlins that support the roof; — **b** — steel, wood and concrete members and material comprising the roof; and in — **c** — hoisting, handling and fitting insulation into place. All of these savings also mean a speeding of construction.

Heat Transmission

The primary purpose of roof insulation is to minimize heat transfer in either direction through the roof. In winter this saves fuel and prevents ceiling condensation; in summer it lessens the temperature rise in the building interior. The great reduction in heat transmission through the use of Mundet Corkboard of various thicknesses is shown in the Heat Loss Table on the opposite page.

Condensation

When moist air in contact with a cold roof is cooled until it reaches its point of total saturation or dewpoint, some of the moisture condenses on the cold surfaces. This "ceiling sweat" accumulates and drops to the floor where it may cause discomfort to workmen and damage to machinery, materials or finished products. The loss due to condensation must be considered separately from the direct loss due to heat leakage through the roof, the latter being present in all uninsulated construction while the former appears only when the humidity is relatively high or when the difference in temperature between the inside of the roof and the room is of considerable magnitude.

Losses Prevented by Insulation

Direct—**a**—Heat transmitted through roof and walls. —**b**—Damage to goods in process of manufacture.—**c**—Decreased efficiency of labor.

Indirect—**a**—Damage to machinery.—**b**—Increased maintenance.—**c**—Deterioration of roof structure, especially if wooden.—**d**—Delay due to repairing of replacing goods.—e—Ill will of customers.—**f**—Lowered morale of labor.

Uncontrolled condensation is a serious problem in the following types of industrial operations:—Bakeries—Dairies—Dye Plants—Food Processing Plants—Laundries—Lumber Drying Rooms and Kilns—Packing Houses—Paper Mills—Power Houses—Indoor Swimming Pools—Textile Mills, cotton, wool and silk—Tobacco factories—Turkish Baths—Twine Mills.

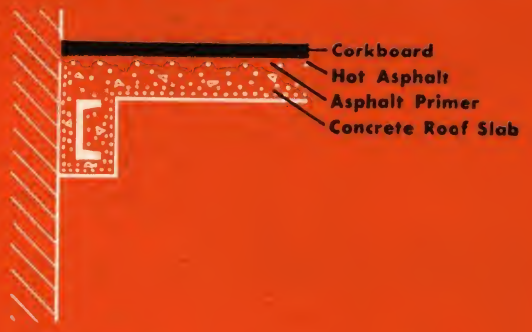
Improved Working Conditions

When bringing to the attention of manufacturers the need for cork insulation in buildings, the greater stress has been laid in the past upon the resultant saving in fuel. Today, industrial executives in ever increasing numbers realize that a most important factor in their problem of keeping costs at a minimum is the attitude of their labor. A worker is never efficient when he is uncomfortable from heat, cold or dampness and therefore the use of insulation, while it may be considered as an intangible benefit from this angle, is nevertheless of vital import.

Specifications and Installation Details

Over Concrete Roof Decks

Preliminary — Two coats Mundet Asphalt Primer. — *Insulation*— . . . in. Mundet "Jointite" Corkboard in heavy hot asphalt mop coat. Second layer, if required, in hot asphalt dip coat with all joints broken.—*Finish* —None. Insulation protected before nightfall with at least two-ply roofing.

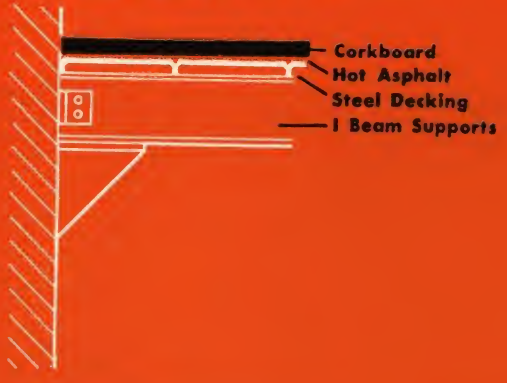


Over Wood Roof Decks

Preliminary—One layer of . . . . . roofing in hot asphalt; joints lapped 3-in.—*Insulation*— . . . in. Mundet "Jointite" Corkboard in heavy hot asphalt mop coat. Second layer, if required, in hot asphalt dip coat with all joints broken.—*Finish*—As under Concrete Roof Decks.

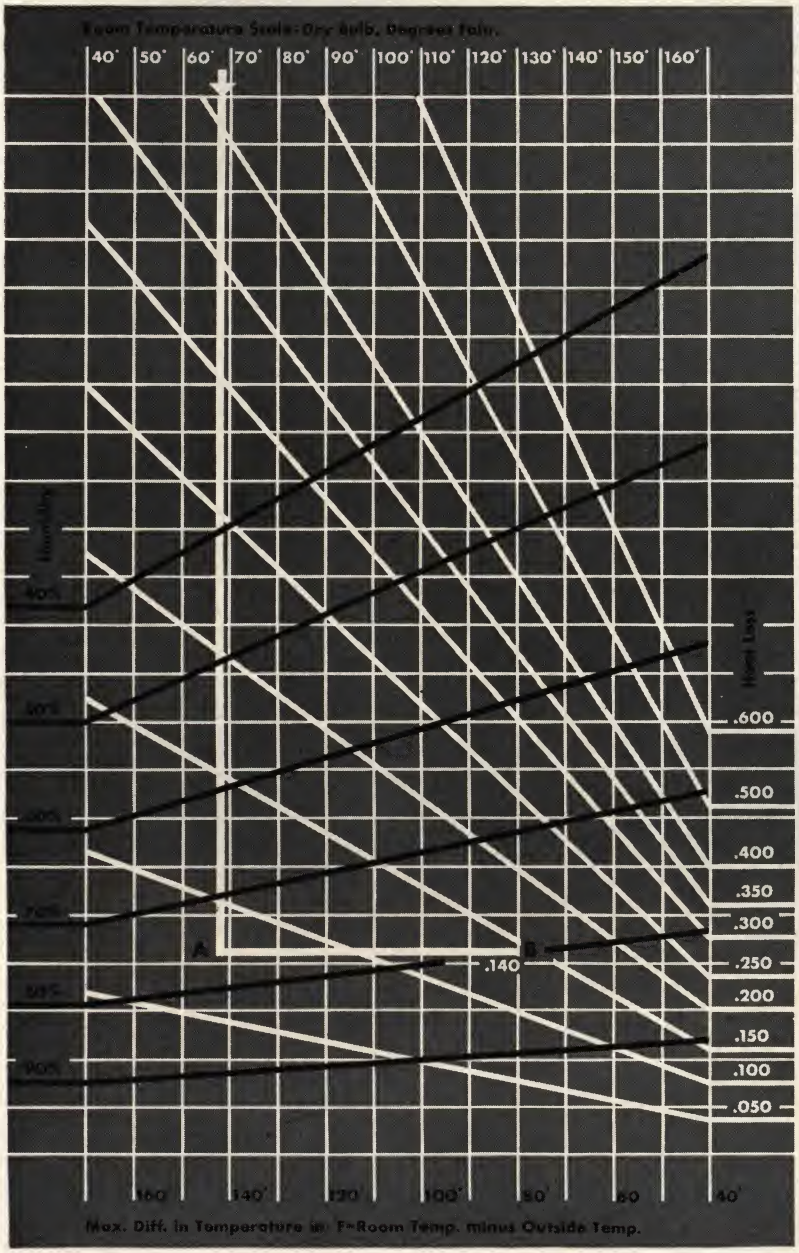
Over Steel Roof Decks

Insulation— . . . in. Mundet "Jointite" Corkboard in heavy hot asphalt mop coat. Second layer, if required, in hot asphalt dip coat with all joints broken.—*Finish* —As under Concrete Roof Decks.



How to Determine the Thickness of Corkboard Needed

Heat Loss Chart



Heat Loss Table

Type of Roof Construction	Heat Loss
2-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.658
1-in. Mundet Corkboard	.206
1½-in. " "	.153
2-in. " "	.122
3-in. " "	.087
4-in. " "	.067
3-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.610
1-in. Mundet Corkboard	.201
1½-in. " "	.151
2-in. " "	.120
3-in. " "	.086
4-in. " "	.067
4-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.568
1-in. Mundet Corkboard	.197
1½-in. " "	.148
2-in. " "	.118
3-in. " "	.085
4-in. " "	.066
6-in. Concrete Slab and ⅜-in. Roofing	
No Insulation	.500
1-in. Mundet Corkboard	.187
1½-in. " "	.143
2-in. " "	.115
3-in. " "	.083
4-in. " "	.065
2-in. Yellow Pine and ⅜-in. Roofing	
No Insulation	.345*
1-in. Mundet Corkboard	.160
1½-in. " "	.127
2-in. " "	.105
3-in. " "	.078
4-in. " "	.062
3-in. Yellow Pine and ⅜-in. Roofing	
No Insulation	.256*
1-in. Mundet Corkboard	.138
1½-in. " "	.112
2-in. " "	.095
3-in. " "	.072
4-in. " "	.058
Sheet Steel Deck and ⅜-in. Roofing	
No Insulation	1.000†
1-in. Mundet Corkboard	.231
1½-in. " "	.167
2-in. " "	.130
3-in. " "	.091
4-in. " "	.067

*On yellow pine, nominal thickness specified, actual thickness used in tests
†Factor as furnished by The Truscon Steel Co. No wind; smooth plane surface assumed

Use of the Heat Loss Chart—Starting at top of chart follow down the specified Room Temperature line to point of intersection "A" with line of permissible Humidity. Proceed horizontally to point of intersection "B" with vertical line of Max. Temp. Difference extended upward from bottom of chart. This point "B" interpolated between adjacent Heat Loss Lines gives the Max. Allowable Heat Loss without condensation under the assumed conditions.

Use of Heat Loss Table—The above table gives the heat loss or transfer through different roofs insulated with various thicknesses of corkboard. Used with the Heat Loss Chart, the required thickness of corkboard for a given heat loss "B" is readily determined without further calculation.

Example—*The Problem:*—A plant with 3-in. yellow pine roof and ⅜-in. built-up roofing; indoor temperature (dry bulb) at ceiling, 68° F; relative humidity, 76%; lowest outdoor temperature, minus 12° F.

***The Solution:*—**Proceed (1) down the 68° Room Temperature line to the 76% Humidity diagonal, (2) horizontally to the line of 80 Maximum Temperature Difference, (3) interpolate heat loss value between adjacent Heat Loss Curves. The resultant heat loss "B" is .140. In the Table of Heat Loss for 3-in. yellow pine, the figure, .140, lies between the value for 1-in. and 1½-in. Mundet Corkboard. Therefore 1½-in. Corkboard would be required to prevent condensation under the stated conditions.

Isolation of Machinery Vibration

Practical considerations prevent the machine designer from eliminating all vibration in industrial machines. But, whether these vibrations be of the sharp, impact type or the relatively small vibrations found in complex machines performing a variety of operations, it is possible and practical to keep such vibrations within the machine limits and so isolate them from the building structure. Likewise, the very high, sound-producing vibrations can be effectively damped.

Requirements of an Isolation Material

A satisfactory isolating medium must be able to:—**1**—Support the imposed loads without undue or variable rate of deflection.—**2**—Absorb vibration in the machine without transmitting it to the surrounding structure.—**3**—Withstand repeated loading without fatigue or permanent set.—**4**—Withstand action of air, water, oil, dilute acids or alkalies without deterioration.—**5**—Maintain its resilience with age.

Mundet Cork as an Isolation Material

Mundet Cork has proved itself to be pre-eminently fitted for vibration isolation use. Natural cork and three grades of corkboard provide a wide choice for the control of deflection due to load and the hermetically sealed air cell structure of cork (over 50% air by volume) gives it a practically straight line compression curve—deflection directly proportional to loading within wide limits. Thousands of installations, some over a quarter of a century old, under widely varying conditions of service prove the efficiency of Mundet Cork Isolation. Among the installations are steam, gas, and Diesel engines, motors, generators, pumps, fans, blowers, presses, elevator machinery, mixers, grinders, etc.

Types of Mundet Isolation Cork

1 Natural Cork Isolation Mat

For loads of about 800 to 2000 lbs. per sq. ft.—Thickness usually used: 1½ to 2 in. for average vibrations, 3 or 4 in. for intense vibrations or shock loads. Blocks of natural cork of the required thickness are used to make an isolation mat in two ways—**a**—Held in a rigid steel frame—for use under a machine mounted on foundation or floor slab without side isolation;—**b**—Bound in asphalt paper applied in hot asphalt to the sides and bottom of the foundation blocks set flush with floor.

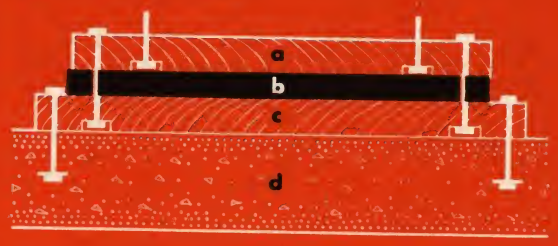
2 Manufactured Machinery Isolation Cork

For Loads of about 2000 to 6000 (or more) lbs. per sq. ft.—Thickness usually used: 1½, 2, 3 and 4 in., depending on frequency and amplitude of the vibration.

Sheets of pure cork are made in various thicknesses and densities by a process similar to that of corkboard. It is structurally strong and must be loaded within the specified limits for proper isolation efficiency.

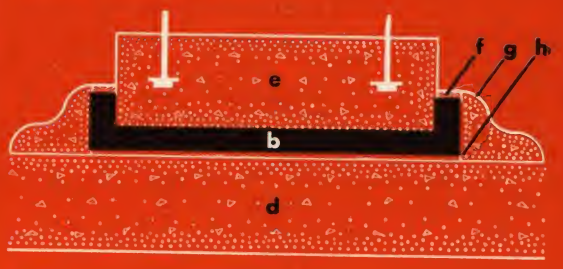
Commercial densities are Light, 1.00 - 1.30 for loads of 2000 to 3000 lbs./sq. ft.; Medium, 1.30 - 1.50 for loads of 3000 to 3500 lbs./sq. ft.; Heavy 1.50 - 1.70 for loads of 3500 to 6000 lbs./sq. ft. A Special 1.80 - 1.90 should be used only when recommended by Mundet engineers.

Typical Wood Mount



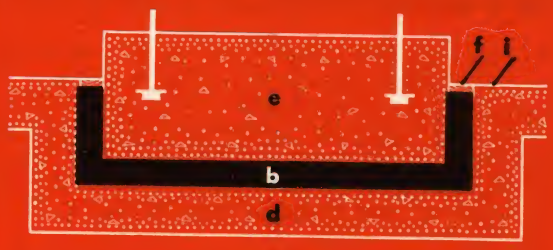
- **a** Wood skids for machine base
- **b** Mundet Isolation Cork
- **c** Wood skids to prevent bridging from base to floor
- **d** Concrete floor

Typical Surface Foundation



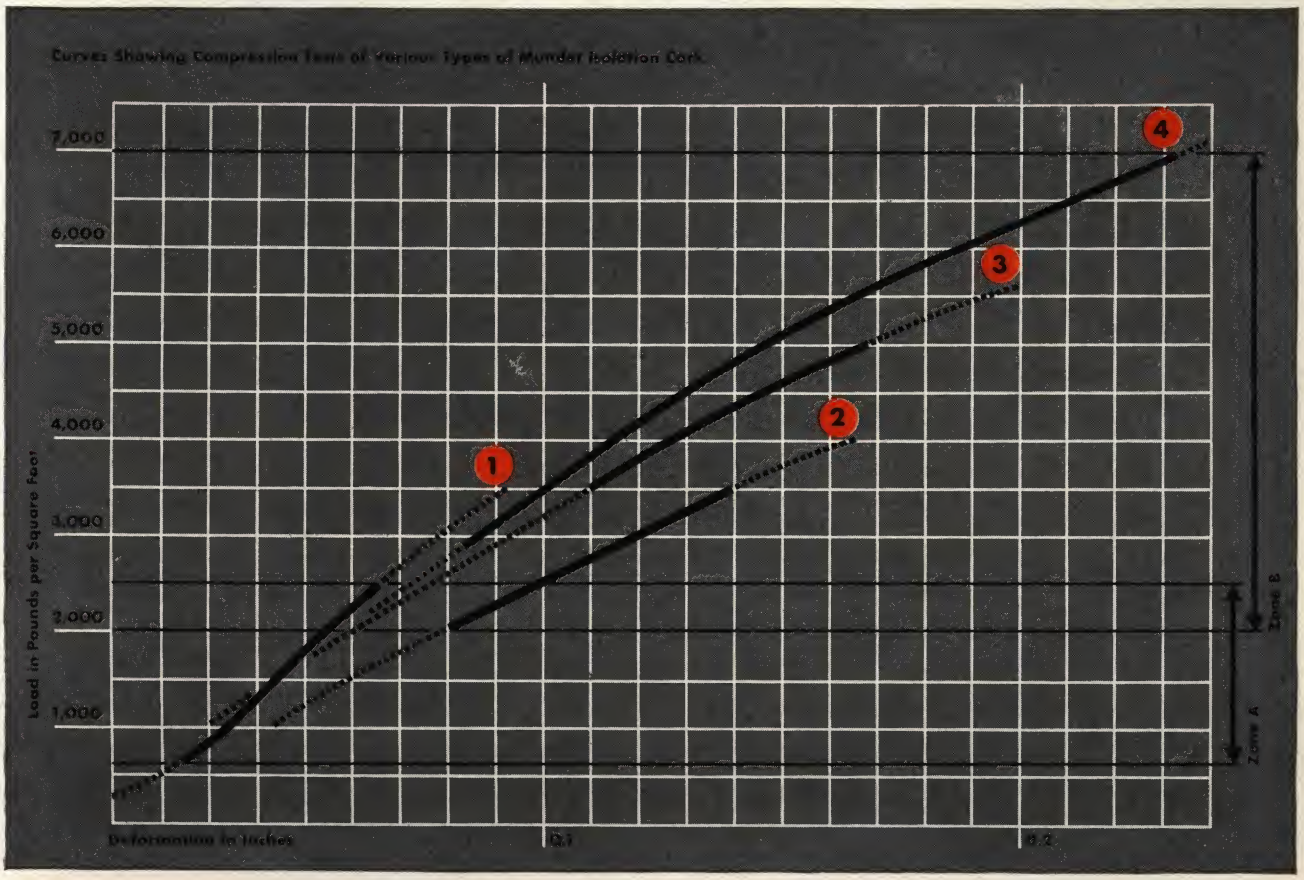
- **b** Mundet Isolation Cork
- **d** Concrete floor
- **e** Concrete foundation block
- **f** Asphalt caulking
- **g** Concrete curb
- **h** Cement levelling coat

Typical Pit Foundation



- **b** Mundet Isolation Cork
- **d** Concrete floor
- **e** Concrete foundation
- **f** Asphalt caulking
- **i** 2 ply asphalt membrane

Selection chart for Mundet Isolation Cork



The above chart gives the deflection under load and the load limits for the recommended types and thicknesses of cork and corkboard for average conditions.

1. Mundet Natural Cork Isolation Mat—1 ½ in. thick. For 800 to 2000 lb./sq. ft. loads.
2. Mundet Machinery Isolation Cork—light density—2 in thick. For 2000 to 3000 lb./sq ft. loads.
3. Mundet Machinery Isolation Cork—medium density—2 in. thick. For 3000 to 3500 lb./sq. ft. loads.
4. Mundet Machinery Isolation Cork—heavy density—2 in. thick. For 3500 to 6000 lb./sq. ft. loads.

The deflection varies directly with the thickness for any one type of cork or corkboard.

The chart is divided into zones which show the recommended load limits. The curves are shown as solid lines within the zone limits, and their behavior outside of these limits is shown by the dotted extensions.

Zone A is for Mundet Natural Cork Isolation Mat.
Zone B is for Mundet Machinery Isolation Cork.

Mundet cork has been tested for static loads up to 15,000 lbs./sq. ft. Further information is available regarding any phase of the use of cork for vibration isolation. Our engineering department will cooperate in the design of installations. Please call upon us.

Specification

(In a pit where monolithic concrete base is to be cast upon the cork.)

***Preliminary*—Pit bottom and sides which receive isolation must be true, in alignment, clean, smooth and dry.—*Isolation*—Mundet (specify type of cork); bottom . . . in. thick, sides . . . in. thick; all laid in heavy hot asphalt mop coat.—*Finish*—Over exposed surfaces, two layers waterproofing felt, mopped in, with hot asphalt; edges lapped at least 6-in.**

Installation Hints

The thickness and density of cork should be in such relation to the load that the cork is compressed within its range of effective vibration absorption. Proper compression—not too great or too small—of the air-filled cork cells is necessary to secure that degree of resiliency giving most satisfactory damping effect. In some cases full bed plate areas cannot be isolated but only limited portions of the bed plate should be supported on Mundet Isolation Cork.

Heavy loads and light densities give good results. Heavy foundations lower the center of gravity and increase the damping effect.

Any direct unisolated contact or connection should be avoided. Through bolts, if used, should be isolated along the shafts and under the head washers in order to prevent the flow of machine vibration to the supporting structure.

Mundet Cork Corporation

Insulation Division: 7101 Tonnelle Ave., North Bergen, N. J.

Insulation Factory: Hillside, N. J.

"Everything Made of Cork"

Mundet District Offices

Atlanta, Ga.	339 Elizabeth St., N.E.	Jacksonville 6, Fla.	800 E. Bey St.
Boston, Mass.	57 Regent St., No. Cambridge 40	Kansas City 7, Mo.	1428 St. Louis Ave.
Chicago 16, Ill.	2601 Cottage Grove Ave.	Los Angeles, Calif.	(Maywood) 6116 Walker Ave.
Cincinnati 2, Ohio	427 West Fourth St.	New Orleans 16, La.	315-25 North Front St.
Dallas 1, Texas	505 Southland Life Annex	Philadelphia 39, Pa.	856 North 48th St.
Detroit 21, Mich.	14401 Prairie St.	St. Louis 4, Mo.	241 S. Third St.
Houston 1, Texas	Commerce and Palmer Sts.	San Francisco 7, Calif.	440 Brannon St.

Mundet Distributors are Located in the Following Cities

Amana, Iowa	Denver, Colo.	Norfolk, Va.	Salt Lake City, Utah
Anaconda, Mont.	El Paso, Texas	Oklahoma City, Okla.	Seattle, Wash.
Appleton, Wis.	Hartford, Conn.	Phoenix, Ariz.	Tacoma, Wash.
Averill Park, N. Y.	Johnson City, Tenn.	Plattsburgh, N. Y.	Toledo, Ohio
Baltimore, Md.	Knoxville, Tenn.	Portland, Oregon	Tucson, Ariz.
Brookings, S. D.	Memphis, Tenn.	Providence, R. I.	Utica, N. Y.
Buffalo, N. Y.	Minneapolis, Minn.	Richmond, Va.	Washington, D. C.
Charleston, W. Va.	Nashville, Tenn.	Rochester, N. Y.	Westbury, N. Y.

Digitized by:

ASSOCIATION
FOR
PRESERVATION
TECHNOLOGY,
INTERNATIONAL
www.apti.org

BUILDING
TECHNOLOGY
HERITAGE
LIBRARY

https://archive.org/details/buildingtechnologyheritagelibrary

From the collection of:

Carol J. Dyson, AIA